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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/817,499	04/02/2004	Peter Onody	P2083US	3151

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EXAMINER	
LE, DINH THANH	

ART UNIT	PAPER NUMBER
2816	

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H-A

Office Action Summary	Application No.	Applicant(s)	
	10/817,499	PETER ONODY	
	Examiner	Art Unit	
	DINH T. LE	2816	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *21-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *4/2/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The specification has been checked to the extent necessary to determine the presence of all possible minor errors. However, the applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objection

Claim 26 is objected to because it depends on itself. Correction is required.

Claim 35 is objected to because of the following informalities: "third and fourth resistor" on line 8 should be corrected as –third and fourth resistors--. Appropriate correction is required.

Claims 1-20 should be cancelled in accordance with the selection filed on 6/20/05. Correction is required.

Claim Rejections

Claim Rejections - 35 USC § 112

Claims 21-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Correction or clarification is required.

In claim 21, the recitation "the value" and "the controlling output" on lines 3-4 and "the structure" on line 6-7 lacks clear antecedent basis. The same is true for claims 41, 45, 46.

In claim 24, the recitation "the connection layout", "the value" and "the respective resistors" lacks clear antecedent basis. It is unclear what the "layout" is . The same is true for reciting "the values" on line 5 in claim 27 and 33.

In claim 26, it is unclear how the constant current can be "mirrored" since no means for performing the mirror function is recited.

In claim 35, the recitation "at east one filter stage" on line 1 is confusing because it is unclear if this is additional "filter stage" or further recitation of the previously claimed "filter stage" on line 2 of claim 21. The same is true for claims 35-36. Also, it is unclear how the first and third resistors can comprise the first and second buffer output resistors as recited on lines 21-22 and how this limitation is read on the preferred embodiment or seen on the drawings.

The remaining claims are dependent from the above claims and therefore also considered indefinite.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 21-24, 30 and 41 are rejected under 35 USC 102 (e) as being anticipated by Mohieldin et al (US 6,646,498).

Mohieldin et al discloses in Figures 5 and 7-8 a tunable filter circuit comprising:

- at least one filter stage (Figure 5) comprising at least one variable resistor (RN1-RN3) and capacitors (CN2-CN3),;

- a resistor/capacitor oscillator (70, Figure 8) having an output (G2:G0) for controlling the value of the variable resistor (RN1-RN3)), said RC oscillator further comprising at least one variable resistor;

- wherein the controlling output of the RC oscillator also controls the value of the variable resistor (Rnosc) of the RC oscillator; and

- wherein the structure of the variable resistor (RN1-RN3) of the filter stage is substantially identical to the structure of the variable resistor (Rnosc) of the RC oscillator, lines 60-67, column 15.

- With regard to claim 23, wherein the variable resistors comprises switchable resistors, Figure 5).

- With regard to claim 30, the frequency of the RC oscillator is proportional to the frequency of the tilter stage.

Claims 21-33, 41-45 and 48 are rejected under 35 USC 102 (e) as being anticipated by Pham (US6,803,813).

Pham discloses in Figures 3-11 a tunable filter circuit comprising:

- at least one filter stage (116) comprising at least one variable resistor (116r) and capacitors (CS);

- a resistor/capacitor oscillator (102) having an output (107) for controlling the value of the variable resistor (116r), said RC oscillator further comprising at least one variable resistor (102r);

- wherein the controlling output of the RC oscillator also controls the value of the variable resistor (102r) of the RC oscillator; and

- wherein the structure of the variable resistor (116r) of the filter stage is substantially identical to the structure of the variable resistor (102r) of the RC oscillator.

With regard to claim 22, the oscillator (102) is the DCO circuit.

With regard to claim 23 , wherein the variable resistors comprises switchable resistors, Figure 11).

With regard to claim 25, wherein voltage across the switchable resistor of the RC oscillator is substantially constant so that a substantially constant current (IR) flows through the switchable resistor (102r)

With regard to claim 26, wherein the substantially constant current (IR) is mirrored for alternatingly charging and discharging a capacitor (102c) of the RC oscillator.

With regard to claim 30, the frequency of the RC oscillator is proportional to the frequency of the filter stage.

With regard to claim 27, an inherent reference oscillator for providing a signal (CLK2)

and 1 resistor setting circuit (SAR 106) having a first input for receiving a controlling output (105) and a second input for receiving said output of the reference oscillator (CLK2), wherein the controlling output of the resistor setting circuit controls the values of the variable resistors (102r, 116r) of the filter stage and the RC oscillator. 28.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 34-40 and 46-47 and 49 are rejected under 35 USC 103 (a) as being unpatentable over Mohieldin et al (US 6,646,498) in view of Figure 2 of the applicant's admitted prior art.

Mohieldin et al discloses in Figures 4-5 and 7-8 a tunable filter comprising all of the limitations of the claimed invention as discussed above. However, Mohieldin et al does not disclose that the Sallen-Key filter circuit (Figure 4) comprises a multiple filter stage which includes an amplifier, the first to fourth resistors, at least one capacitor, first and second feedback capacitor and the input buffer with a first and second output resistors as combined in claim 35. The admitted prior art suggests a Sallen-Key filter in Figure 2 having an amplifier (OA), resistors (FR1-FR4),capacitors and an input buffer (IB) for operating in high frequency suitable for

application in high bandwidth communication network. It would have been obvious to a person having skill in the art at the time the invention was made to employ the filter suggested by the admitted prior in the circuit of Mohieldin et al for the purpose of operating in high frequency suitable for application in high bandwidth communication network. Although the admitted prior art does not disclose that the input buffer (IB) comprises first and second buffer output resistors; however, a skilled artisan realizes that the input buffer (IB) has inherent output impedances which resistance values is included in the resistance value of the resistors (FR1, FR3). Thus, the resistors (FR1, FR3) are the equivalent resistors which include the output resistors of the buffer (IB).

With regard to claims 36-37, since the capacitors (CN2-CN3) of Mohieldin et al are tunable capacitors (master filter) , obviously the capacitors of the modified filter (slave filter) of Mohieldin et al should be tunable.

With regard to claim 40, although Mohieldin et al does not specify the supply voltage value (VDD); however, this voltage can be selectable to accommodate with its components and the available supply voltage of a predetermined system in which the modified circuit of Mohieldin is to be used. Lacking of showing any criticality, it would have been obvious to select a optimum supply voltage , i.e., of not higher than 1.5V, for the modified filter of Mohieldin et al for the purpose of accommodating with the predetermined system. *In re Boesch*, 617F.2d272.205USPQ215(CCPA 1980).

Claims 34-40 and 46-47 and 49 are rejected under 35 USC 103 (a) as being unpatentable over Pham (US 6,803,813) in view of Figure 2 of the applicant's admitted prior art.

Pham discloses in Figures 3-11 a tunable filter comprising all of the limitations of the claimed invention as discussed above. However, Pham does not disclose that the filter circuit (116) comprises a multiple filter stage which includes an amplifier, the first to fourth resistors, at least one capacitor, first and second feedback capacitor and the input buffer with a first and second output resistors as combined in claim 35. The admitted prior art suggests a Sallen-Key filter in Figure 2 having an amplifier (OA), resistors (FR1-FR4),capacitors and an input buffer (IB) for operating in high frequency suitable for application in high bandwidth communication network. It would have been obvious to a person having skill in the art at the time the invention was made to employ the filter suggested by the admitted prior in the circuit of Pham for the purpose of operating in high frequency suitable for application in high bandwidth communication network. Although the admitted prior art does not disclose that the input buffer (IB) comprises first and second buffer output resistors; however, a skilled artisan realizes that the input buffer (IB) has inherent output impedances which resistance values is included in the resistance value of the resistors (FR1, FR3). Thus, the resistors (FR1, FR3) are the equivalent resistors which include the output resistors of the buffer (IB).

With regard to claims 36-37, since the capacitors (116c) of Pham are tunable capacitors (master filter) , obviously the capacitors of the modified filter (slave filter) of Pham should be tunable.

With regard to claim 40, although Pham does not specify the supply voltage value (VDD); however, this voltage can be selectable to accommodate with its components and the available supply voltage of a predetermined system in which the modified circuit of Pham is to be used. Lacking of showing any criticality, it would have been obvious to select a optimum

supply voltage , i.e., of not higher than 1.5V, for the modified filter of Pham for the purpose of accommodating with the predetermined system. *In re Boesch*, 617F.2d272.205USPQ215(CCPA 1980).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DINH T. LE whose telephone number is (571) 272-1745. The examiner can normally be reached on Monday-Friday (8AM-7PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TIMOTHY CALLAHAN can be reached at (571) 272-1740.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DINH LE

Primary Examiner